Glossary

ACE Assistant Chief of Engineers

AF Air Force

AFI Air Force instruction

AFP Air Force pamphlet

AFSC Air Force Specialty Code

air-foam-gel technique Adding foamer to a fluid in the same proportions as clear water to get a richer, more stable foam.

air-lift method A pump-testing method that uses an air-lift pump,

air-line method A procedure to measure the water level using an air line; the air line is copper tubing or galvanized pipe that is long enough to extend below the lowest water level being measured.

air rotary driling A well-drilling method that uses compressed air as the circulating fluid.

alligatoring A network of fine cracks and small carbide flecks on a bit that appear after hours of drilling in nonabrasive soft rock.

alluvium Soils that are deposited by running water.

alt attitude

ant-mound-like openings. *See* **qanat**

AO area of operations

APOD aerial port of debarkation

APOE aerial port of embarkation

aquagel Commercial chemical agent added to mud drilling fluid to prevent it from freezing. *See also* **barite; fibratex; gel-flake; impermex; micatex; smentex**

aquiclude Subsurface rock or soil unit, such as clay, shale, and unfractured igneous and metamorphic rock, that does not transmit water readily and cannot be used as a water-supply source.

aquifer Saturated rock or soil unit, such as gravel, sand, sandstone, limestone, and fractured igneous and metamorphic rock, that has sufficient hydraulic conductivity to supply water for a well or spring.

aquitard A unit that retards or slows the passage of water.

AR Army regulation

Ark Arkansas

ARTEP Army Training and Evaluation Program

attapuigite Commercially processed clay used for drilling in brackish or salty water.

ATTN attention

augered well A well that is bored using hand-or power-driven earth augers.

AWWA American Water Works Association

backwashing Well-development method. *See also* **jetting method; gravity-outflow method; pressure-pumping method; pump-surge method; surge-block method**

ball-down method Installing screen using a special end fitting,

bail-down placement A method of simultaneously placing the gravel pack and installing the screen.

Barafos A white, granular sodium tetraphosphate thinner and dispersant added to drilling fluid to prevent mud from sticking to sand grains.

barite Commercial chemical agent added to mud drilling fluid to prevent it from freezing. *See also* **aquagel; fibratex; gel-flake; impermex; micatex; smentex**

barreling A wear pattern that causes the diameter of the bit body to exceed the gauge diameter of the buttons.

basalt An igneous rock that is a very productive water bearer.

bentonite Commercially processed clay used for drilling; bentonite forms naturally from decomposition of volcanic ash, consists of aggregates of flat platelets, and contains sodium montmorillonite, which is important in building viscosity.

body metal A type of bit failure.

body wash Eroded body metal in bits.

BOM bill of materials

boundary indicators Characteristics that are indicative of local or regional groundwater flow systems.

brass-jacket-type drive point Consists of a perforated pipe wrapped with wire mesh and covered with a perforated brass sheet.

brass-tube-type drive point Consists of a brass tube slipped over perforated steel pipe for a rugged construction.

cable jack A four-pronged receptacle located in the upper right comer of the panel on the electrical logging system.

cable-tool method A very slow drilling method that can be used to penetrate rocky soil or moderately hard sedimentary rock; the drill used in this method does not require large amounts of drilling fluid.

CAL calibrate

CAL ADJUST (calibration adjustment) Located in the lower right-hand comer of the panel on the electrical logging system and used to zero the galvanometers when calibrating the instrument.

carbide shear The most prevalent type of carbide breakage in bits

casing ring and slip A device used to suspend the casing at the ground surface and for pulling pipe from the hole using jacks under each side of the casing ring.

catchment Formation whine impervious rock underlies a zone of fractured rock or alluvium that serves as a reservoir for infiltrated water; a catchment can be a special type of aquifer.

cathodic protection. *See* **sacrificial anode**

CB construction battalion

cc cubic centimeter(s)

centrifugal pump A variable displacement pump in which water flows by the centrifugal force transmitted to the pump in designed channels of a rotating impeller.

cfm cubic foot (feet) per minute

cfs cubic foot (feet) per second

circular-orifice meter A device used to measure discharge rates.

circular-orifice method A procedure to measure discharge rates using a circular-orifice meter.

closed-well method A compressed-air method that involves using compressed air to close the top of the well with a cap and by arranging the equipment so air pressure can buiId up inside the casing to force water out through the screen openings.

cm cubic meter(s)

compressed-air methods Rapid, effective well-development methods. *See also* **closed-well method**; **open-well method**

CON DET A wetting agent added to drilling fluid to increase the dispersion action of polyphosphates.

confined aquifer An aquifer that is completely filled with water and is overlaid by a confining bed.

confining bed Aquiclude that exists between aquifers, water moves only within the aquifer.

consolidated deposit Rock that consists of mineral particles of different sizes and shapes.

continuous permafrost A zone where permafrost will be thick with no unfrozen ground. *See also* **discontinuous permafrost**; **permafrost**

continuous-slot drive point A screen with horizontal openings and one-piece welded construction and contains no internal perforated pipe to restrict the intake area.

CONUS continental United States

core barrel A double-tube sampler used to collect undisturbed soil samples in material that either contains gravel or is too hard for a thin-wall sample.

CPM critical-path method

crop irrigation Surface indicator that shows the use of surface water or groundwater for agriculture.

CSS combat service support

CUR (current) A red plug receptacle used to connect the surface-current ground wire to the instrument.

current switch The ON-OFF switch located directly below the function switch; the current switch is a momentary spring-return toggle switch.

d depth

DA Departmnt of the Army

Darcy's Law Principle that describes the flow of groundwater.

DC direct current

Denisen sampler, *See* **core barrel**

DD Department of Defense

DHD down-hole drilling

discharge Water that moves from one area into another.

discontinuous permafrost A zone where permafrost will be thin and maybe absent on the south slopes of hills, in valley bottoms containing permeable alluvial material, and under surfaces that have been cleared of vegetation. See *also* **continuous permafrost; permafrost**

dispersion treatment Adding dispersing agents to drilling fluid, backwashing, jetting water, or water standing in the well to counteract the tendency of mud to stick to sand grains.

dissolution potential The possibility of developing high secondary permeability in a soluble rock because the rock dissolves through contact with groundwater.

DMA Defense Mapping Agency

DOD Department of Defense

dolomite A carbonate rock that dissolves when carbon dioxide from the atmosphere and groundwater mix to form carbonic acid.

double-casing placement A method of placing gravel using a temporary outer casing.

drainage basin An area drained by a stream or river. *See also* **hydrographic basin (local drainage basin); major river basin; regional river basin**

drawdown Measure of how much the water level near the well is lowered when the well is pumped.

draw works Main drill-head hoists that are mechanically or hydraulically driven wire-line winches,

drilling blind A condition that exists when a driller continues to drill when fluid circulation is lost,

drive clamp Uused in driving easing or pipe and is attached to the square of the drill stem.

drive head Device that is placed on the pipe to protect the threads the the driving blows of the drive clamps; a drive head is put on by unscrewing the bit, slipping the drive head over the drilling stem, and making up the joint again.

drive monkey A weight that slides over the pipe and is used in the falling-weight method of driving a well.

driven method Installing casing as with the borehole, the cable-tool, or driven-point well method.

drive point Perforated pipe with a steel point at the lower end to breakthrough pebbles or thin, hard layers.

drive shoe Device attached to the lower end of the pipe to prevent the pipe from crumpling while being driven; a drive shoe is threaded to fit the pipe or casing.

dump-bailer method Placing grout in a casing using a dump-bailer machine.

EAC echelons above corps

electric-line method A procedure to measure the water level using an M-Scope. *See also* **M-Scope**

electrode selector switch A five-position switch located directly above the ohmmeter on the electrical logging system.

elev elevation

elevator (casing) A device used to handle pipe; the elevator is clamped around the pipe directly under the coupling. *See also* **pin hook; sand line**

ENGR engineer

evaporation Direct radiation from the sun that causes liquid at the surface of a body of water to change from a liquid to a vapor.

evaporite Sedimentary rock that is generally capable of storing and transmitting groundwater but teds to dissolve in the water

E-Z Mud A synthetic, inorganic polymer.

F Fahrenheit

fall-in Material that accumulates in the bottom of the borehole after circulation stops,

falling weight Driving method that uses a steel driving bar attached to a rope; the bar falls freely inside the pipe and strikes the base of the drive point.

feed drive Mechanism on a rotary rig that applies a downward thrust to the drill string.

fibratex Commercial chemical agent added to mud drilling fluid to prevent it from freezing. *See also* **aquagel; barite; gel-flake; irnpermex; micatex; smentex**

filter cake Solids from the drilling mud deposited on the borehole wall as the water phase is lost into the formation

fish Portion of the drill string left in the borehole. *See also* **fishing; string failure**

fishing An attempt to retrieve the portion of the drill string left in the borehole. See also fish string failure

flow-meter method A procedure used to measure flow rate using a turbine-type flow meter.

FM field manual

FMF Fleet Marine Force

foamer Substance used in air rotary drilling to enhance the air's ability to carry cuttings and reduce the velocity required to clean the borehole.

foot piece A device at the end of an air pipe that breaks the air into small streams so that the bubbles formed will be as small as possible.

formation stabilizer Material placed on the outside of the screen to help prevent deterioration of the annular space; using formation stabilizer is an alternative method to using gravel-pack material.

fpm foot (feet) per minute

ft foot (feet)

ft/min foot (feet) per minute

function switch A three-position selector switch located directly beneath the galvanometers on the electrical logging system.

gal gallon(s)

galvanometers A zero-centered micrometer on the electrical logging system.

gel-flake Commercial chemical agent added to mud drilling fluid to prevent it from freezing. *See also* **aqualgel; barite; fibratex; impermex; micatex; smentex**

gel strength Thickness of drilling mud at rest.

geologic structure Feature, such as a fold, fracture, joint, or fault, that disrupts the continuity of rock units.

geyser effect A result of denser mud in the anuular space flowing down the hole and forcing the clean drilling mud up the drill rods.

going crooked deviated borehole

GPH gallon(s) per hour

GPM gallon(s) per minute

gravel pack Artificial sand filter.

gravity-outflow method A backwashing method that involves pouring water into the well rapidly to produce outflow through the screen openings.

groundwater indicators Features that suggest the presence of groundwater.

hand auger A device that consists of a shaft or pipe with a wooden handle at the top and a bit with curved blades at the bottom; a hand auger

can penetrate clay, silt, and those sands in which an open borehole will stand without caving.

helical-rotor pump A positive-displacement, rotary-screw- or progressing-cavity-type pump designed for relatively low-capacity, high-lift wells that arc 4 inches or larger in diameter.

HQ headquarters

hydraulic conductivity A measurement of the relative flow of water through a subsurface material; the results of the measurement are related to the size and spacing of particles or grains in soils or to the number and size of fractures in rocks.

hydrographic basin (local drainage basin) Subdivision of a regional river basin. *See also* **drainage basin; major river basin; regional river basin**

hydraulic gradient Determines the direction of groundwater flow.

hydrologic cycle The constant movement of water above, on, and below the earth's surface.

ID inside diameter

igneous rock Rock that forms when hot molten material (magma) cools or solidifies either inside the earth's crust or on the earth's surface (lava). *See also* **lava; magma**

impermeable barriers Features (solid rock masses) through which groundwater cannot flow.

impermex Commerical chemical agent added to mud drilling fluid to prevent it from freezing. See also **aquagel; barite; fibratex; gel-flake; micatex; smentex**

in inch(es)

infiltration Precipitation on land surfaces that seeps into the ground

inside-tremie method Placing grout in the bottom of the hole through a tremie pipe that is set inside the casing.

ISO International Standards Organization

ITWD International Standards Organization / air-transportable water drill.

JCS Joint Chiefs of Staff

jet-drive drilling A method of constructing small wells in cold climates; the wells are usually 2 inches in diameter and are drilled to a depth of 200 feet.

jet pump A combination of a surface centrifugal pump, a down-hole nozzle and a venturi arrangement used in small diameter wells requiring a lift of 100 feet or less.

jetted well A well that is dug using a high velocity stream of water.

jetting method A backwashing method that involves using a jetting tool to remove caked drilling mud from the borehole wall; this method requires a large water supply.

JOG Joint Operations Graphics

karst topography Results from the dissolution of carbonate rocks by groundwater and is characterized by caves, sinkholes, closed depressions, and disappearing streams.

kg kilogram(s)

kg/m kilogram(s) per meter

kv kilovolt(s)

kw kilowatt(s)

lag time The time it takes sample material to reach the surface during a depth-determination teat.

lava Magma that cools or solidifies on the earth's surface. *See also* **igneous rock; magma**

lb pound(s)

lb/ft pound(s) per foot

limestone A carbonate rock that dissolves when carbon dioxide from the atmosphere and groundwater mix to form carbonic acid.

lithification The process by which sediments are converted to rock; lithifiiation includes compaction, consolidation, cementation and desiccation.

LOG (logging) Position on the function switch on the electrical logging system.

logging cable A cable on the electrical logging system used to lower the probe into the well.

loss zone Area where grout is lost into the formation.

lost circulation Volume loss of the drilling fluid returning to the surface.

LPM liter(s) per minute

LVS Service Logistical Vehicle Systems

m meter(s)

ma milliampere(s)

magma Hot molten material. *See also* **igneous rock; lava**

major river basin Largest member in the river basin grouping; the Mississippi River Basin is a major river basin. See *also* **drainage basin; hydrographic basin; regional river basin**

Marsh funnel Device used to test mud viscosity; the funnel is 12 inches long and 6 inches in diameter, and it has a No 12 mesh strainer, a 1,500-ml cone, a 2-inch-long calibrated hard-rubber orifice (inside diameter of 3/16 inch), and a 1,000-ml capacity cup.

Marsh-funnel test Procedure routinely conducted to determine the thickness or apparent viscosity of drilling fluid.

MEAPO Middle East/Africa Project Office

measured-container method A procedure used to determine flow rate from a well or pump by measuring the time required to fill a container with a known volume.

MEDEVAC medical evacuation

metamorphic rock Igneous, sedimentary, or preexisting metamorphic rock that undergoes further transformation by changes in pressure, temperature or chemistry.

micatex Commerical chemical agent added to mud drilling fluid to prevent it from freezing. *See also* **aquagel, barite; fibratex; gel-flake; impermex; smentex**

min minute(s)

ml milliliter(s)

mm millimeter(s)

MO Missouri

monitoring well Small water well used for measuring water level, estimating well yield, and taking samples for quality analysis; monitoring wells are drilled next to permanent wells at specified intervals.

mph mile(s) per hour

MS Mississippi

M-Scope Two-conductor, battery-powered indicator used to measure water levels.

mud pump A positive-displacemenc double-acting piston pump with capacities ranging from one to several hundred GPM at pressures up to several hundred psi.

mud rotary drilling A well-drilling method that uses mud to circulate the drilling fluid during the drilling process.

N no

N/A not applicable

NATO North Atlantic Treaty organization

NAVFAC Naval Facilities Engineering Command

NBC nuclear, biological chemical

NCF naval construction force

NCOIC noncommissioned officer m charge

NMCB naval mobile construction battalion

No number

NSN national stock number

OD outside diameter

ohmmeter An instrument on the electrical logging system that is located directly above the CAL ADJUST; the ohmmeter indicates the earth resistivity in ohm-feet.

open-hole method of installing casing Installing casing into a borehole one casing section at a time.

open-hole method of installing screen Installing telescoping screen when the depth and thickness of the aquifer have been predetermined.

open-hole placement A method of installing gravel-pack material m a well.

open-pipe method A procedure to measure discharge rates using a fully open pipe and measuring the distance the water stream travels parallel to the pipe at a 12-inch vertical drop.

open-well method A compressed-air method that involves establishing the surging cycle by pumping from the well with an air lift and by dropping the air pipe suddenly to cutoff the pumping action.

outside-tremie method Placing grout outside the casing using a tremie pipe; this method is not recommended for depths greater than 100 feet.

P pamphlet

particle slip Downward movement of an object through fluid.

pendulum effect Action of creating a straight borehole from a weighted drill string and bit.

perched aquifer An aquifer that lies above an unconfined aquifer and is separated from the surrounding groundwater table by a confining layer.

percussion drilling A method of drilling that involves crushing by impact from the teeth of the drill bit percussion drilling for water wells uses down-hole, pneumatic-percussion hammer drills.

permafrost Permanently frozen rock and soil that is widespread in the Arctic north of 50°N latitude; permafrost is either continuous or discontinuous. *See also* **continuous permafrost; discontinuous permafrost**

permeability The capacity of a porous rock or soil to transmit a fluid.

pH Negative logarithm of the effective hydrogen-ion concentration or hydrogen-ion activity in gram equivalents per liter used in expressing acidity and alkalinity on a scale of O to 14 with 7 representing neutrality.

pin hook Device used with an elevator to lift very heavy strings of pipe; the hook is attached to the rope socket on the drilling line. *See also* **elevator (casing); sand line**

pipe clamp A device used to hold the pipe at any position in the hole during drilling operations.

pipe tong Device used to tighten 6- and 8-inch drive pipe.

pitcher pump A surface-mounted, reciprocating or single-acting piston pump.

pitting A condition on bits that is caused by the presence of foreign material such as rock cutting or the use of rock drill oil with a high sulphur content.

playas Dry lake beds comprised mainly of clay and located in intermountain valleys.

POL petroleum, oils, and lubricants

polymer A water-based, organic, inorganic, natural, synthetic, or synthetically formulated additive; polymers are formulated for various drilling fluid purposes and can be used alone or to enhance clay muds.

Poly-Sal Synthetic, inorganic polymer. *See also* **polymer**

popping A condition whereby a carbide insert will pop clean from its socket if the drill string is not properly fed up in the hole.

population distribution Surface indicator that could indicate water availability because of population density.

porosity Voids in soil and rocks.

POT (potentiometer) A black plug receptacle used to connect the surface-potential ground wire to the instrument.

power auger A device that is rotated, raised, and lowered by a power-driven mechanism; a power auger has a depth limit of about 10 feet and can be used only in areas where the water table is close to the surface.

ppm parts per million

precipitation Moisture released from clouds to the earth in the form of rain, sleet, hail, or snow.

pressure-pumping method A backwashing method that involves capping the casing and pumping water into the well under pressure.

probe selector switch A switch on the electrical logging system that is located directly below the SP shutoff switch on units modified for mud logging.

psi pound(s) per square inch

psig pound(s) per square inch gauge

PTO power takeoff

pull-back method A way of installing telescoping screen.

pulldown. *See* **feed drive**

pump-surge method A backwashing method that involves alternately pumping water to the surface and letting water run back into the well through the pump-column pipe.

push-tube A method of collecting undisturbed soil samples; this method uses thin-wall, freed-piston samplers in very soft to stiff clays, silts, and sands that do not contain appreciable amounts of gravel.

PVC polyvinyl chloride

qanat A man-made, gently inclined underground channel that allows groundwater to flow from alluvial gravels at the base of hills to a dry lowland; qanats appear as a series of ant-mound-like openings that run in a straight line and act as air shafts for a channel.

qt quart(s)

Quick-Gel Wyoming-type bentonite drilling fluid used for mixing mud

recharge Water that infiltrates the soil.

recharge area Area where the groundwater reservoir is replenished.

RED HORSE rapid engineer deployable, heavy operational repair squadron.

regional river basin Subdivision of a major river basin; the Missouri River Basin is a regional river basin of the Mississippi River Basin. *See also* **drainage basin, hydrographic basin; major river basin**

reservoir indicators Characteristics in soils, rocks, and landforms that define the ability of an area to store and transmit groundwater but which do not directly indicate the presence of groundwater.

Revert A natural, organic polymer fluid derived from the guar plant. *See also* **polymer**

RH-1 An air-transportable RED HORSE echelon composed of 16 people and ready for deployment 12 hours after notification.

RH-2 An air-transportable RED HORSE echelon composed of 93 people and ready for deployment 48 hours after notification.

RH-3 A RED HORSE echelon composed of 295 people and ready for deployment six days after notification

ringing off Fatigue failure in the drill-rod joints caused by excessive torque or thrust or by borehole deviation.

riparian vegetation Dense strands of vegetation along stream channels.

rivers. *See* **streams and rivers**

rock development A well-development method used in rock formations that involves combining jetting with air-lift pumping to wash out fine cuttings, silt, and clay.

rotary pump A pump that uses a system of rotating gears to create a suction at the inlet and force a water stream out of the discharge.

rotary table Rotating platform on a rotary rig that transmits torque to the drill rod through the kelly.

ROWPU reverse osmosis water purification units

RPM revolution(s) per minute

rung off See **string failure**

runoff Precipitation on land surfaces that flows along the surface.

S3 Operations and Training Officer (US Army)

sacrificial anode A simple method of protecting metal casing from corrosion by connecting a galvanically active metal bar to the casing.

salt encrustation Surface indicator that often occurs in playas and is indicative of saline groundwater.

saltwater encroachment Movement of saltwater into zones previously occupied by freshwater.

saltwater intrusion Invasion of salt water into freshwater during pumping.

sanded in A condition that exists when the string becomes stuck when cuttings collect on the bit and collar shoulder.

sand line Device used with the elevator for lifting one or two half lengths of pipe. *See also* **elevator (casing); pin hook**

sandstone Consolidated or cemented sand.

saturated thickness Distance between the top of the groundwater and the bottom of the aquifer.

SC supply catalog

SCFM sea level cubic foot (feet) per minute

semipermeable barriers Features (faults or fractured rock masses) that restrict flow but do not act as a complete barrier.

sedimentary rock Rocks that are composed of sediments that are converted to rock through compaction cementation or crystallization.

self-jetting method Digging a jetted well by sinking a continuous-slot-, brass-jacket-, or jet-head-tapering-type well point.

self-potential potentiometer The instrument in the electrical logging system that balances out the SP that exists between any pair of potential electrodes.

self-priming pump A pump with a priming chamber that makes repriming unnecessary when the pump is stopped for any reason other than au intentional draining.

semipermeable barriers Features (faults or fractured rock masses) that restrict water flow but do not act as complete barriers.

shale Fine-grained sedimentary rock that does not store much groundwater and does not transmit large quantities of groundwater.

single-string method of installing casing Installing casing and screen (already joined) in a single assembly.

single-string method of installing screen. *See* **single-string method of installing casing**

sinker rod An insulated device that can be attached with a leather thong to the probe on the electrical logging system if more weight is needed to carry the probe to the bottom of a well.

smentex Commercial chemical agent added to mud drilling fluid to prevent it from freezing. *See also* **aquagel; barite; fibratex; gel-flake; impermex; micatex**

snow-melt pattern Surface indicator that can provide evidence of recharge areas and directions of groundwater flow.

soil moisture Surface indicator that can provide some indication of recharge and discharge areas; soil moisture content is related to local rainfall and to grain size.

SOP standing operating procedures

SP spontaneous potential

specific retention Water that cannot be pumped out of a well.

specific yield Water that can be pumped from a well.

spring Effluence of groundwater occurring where the water table intercepts the ground surface; a spring is a good surface indicator of the presence of shallow groundwater occurrences.

SP polarity-reversing switch A switch on the electrical logging system that is located directly below the SP potentiometer the switch shows the polarity of the particular cable electrode being used.

SP shutoff switch A spring-return switch on the electrical logging system that is located in the upper left comer of the panel; this switch automatically shuts off the l-1/2-volt C-battery when the instrument lid is closed.

spudding Raising or lowering the drill string.

spudding in Starting the borehole.

squeezing *See* **swelling soil**

Sr specific retention

stabilizers Items, such as drill collars, used on the drill string during drilling operations.

STANAG Standardization Agreement

STD standard

STP Soldier Training Publication

straight pumping A well-completion method that uses a pitcher-spout hand pump.

streams and rivers Surface indicators that are usually recharge areas in arid regions and may be recharge or discharge areas in temperate climates; areas adjacent to streams are considered good locations for wells but are not always the best available areas for water wells because of soil content.

string failure A condition that exists when the drill string parts, leaving a portion in the borehole the drill string is *rung off*. *See also* **fish**; **fishing**

submergence The proportion (percentage) of the length of the air pipe that is submerged below the pumping level.

submersible pump A centrifugal pump closely coupled with an electric motor that can be operated underwater,

submersible-pump method A pump-testing method that uses a submersible pump to pump test the water well.

surface indicator Feature that suggests the presence of groundwater.

surface-water divide Boundary between groundwater flow systems.

surge-block method A backwashing method that involves developing a well by surging water up and down the casing with a surge block or plunger.

swelling soil (squeezing) In-hole effects of shale or clay that absorb water from the drilling fluid

Sy specific yield

TAC Terrain Analysis Center

TAD Transatlantic Division

tag-along compressor auxiliary compressor

tape method Procedure to measure the depth to the static level in a shallow well.

TEC united states Army corps of Engineers Topographic Engineering Center

TM technical manual

TN Tennessee

TO technical manual

TO theater of operations

TOA table of allowances

top head A mechanism on a rotary rig that moves down along the rig mast as the boring is advanced and is raised to the top of the mast to add a length of drill pipe; the top-head drive uses a power swivel.

TRADOC United States Army Training and Doctrine Command

transmissivity The product of hydraulic conductivity and the saturated thickness expressed in gallons per day per foot of aquifer width.

transpiration Water that Wrens to the atmosphere from plants.

tremie placement Placing gravel-pack material using a tremie pipe.

tricone bit A bit that consists of three con-shaped rollers with steel teeth milled into the surfaces.

turbine pump A shaft-driven, multistage, centrifugal pump containing several impellers or bowl assemblies.

uncased-interval method Installing casing in wells located in rock formations.

unconfined aquifer An aquifer that is partly filled with water, has fluctuating water levels, and can receive direct recharge from percolating surface water.

unconsolidated deposit Consists of weathered rock particles of varying materials end sizes.

unscreened well A well in competent rock that does not require a screen; the aquifer is tapped through numerous, irregularly spaced fractures.

US United States (of America)

USAF United States Air Force

USGS United States Geological Survey

vegetation type Surface indicator that can help define the location of recharge and discharge areas end groundwater.

viscosity Relates to true (Newtonian) fluids such as water; viscosity is a proportional constant between sheer stress and rate in laminar flow.

wall stuck A condition that exists when the alignment of a fine-grained soil or shale hole deviates significantly and the drill pipe wallows into the wall.

washdown method Installing screen in an aquifer that is composed of fine to coarse sand with little or no gravel.

wash-in method Installing casing by advancing the borehole for an expedient jetted-well construction.

water-table wells Wells drilled into an unconfined aquifer.

WDRT Water Detection Response Team

WDS well-drilling system

well probe A device on the electrical logging system that consists of one brass current electrode and three lead-oxide potential electrodes.

WES United States Army Corps of Engineers Waterways Experirment Station

wetlands Marshes, bogs, and swamps that arc indicative of very shallow groundwater.

WRDB Water Resources Data Base

XS extra strength

Y yes

yield Volume of water discharged from a well per unit of time when water is being pumped or is flowing freely.

yield point Mud quality broadly included m viscosity.